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# **McGraw-Hill Dictionary of Scientific and Technical Terms**

## **Fifth Edition**

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Editor in Chief

**McGraw-Hill, Inc.**

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On the cover: Photomicrograph of crystals of vitamin B<sub>12</sub>.  
(Dennis Kunkel, University of Hawaii)

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## McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, Fifth Edition

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length of the vessel to pass the object is measured, and the speed can then be computed. { 'däch-mänz 'läg }

**Dutch metal** [MET] An alloy of 80% copper and 20% zinc that is ductile, is easily drawn, and takes a high polish; used for low-priced jewelry. { 'däch-med-əl }

**Dutch process** [CHEM ENG] A process for making white lead; metallic lead is placed in vessels containing a dilute acetic acid, and the vessels are stacked in bark or manure. [FOOD ENG] A chocolate manufacturing process in which cocoa nibs are treated with alkali to neutralize the natural acids present and to enhance color. { 'däch-präs-əs }

**duty classification of a relay** [ELEC] Expression of the frequency with which the relay may be required to operate without exceeding prescribed limitations. { 'düt-ē klas-ə-fə-kā-shən əv ə 'rē-lā }

**duty cycle** [COMMUN] The product of the pulse duration and pulse frequency of a pulse carrier, equal to the time per second that pulse power is applied. Also known as duty factor. [ELECTR] See duty ratio. [ENG] 1. The time intervals devoted to starting, running, stopping, and idling when a device is used for intermittent duty. 2. The ratio of working time to total time for an intermittently operating device, usually expressed as a percent. Also known as duty factor. [MET] The percentage of time that current flows in equipment over a specific period during electric resistance welding. [NUCLEO] The fraction of time during which a pulsed accelerator beam is on target, usually expressed as a percent. Also known as duty factor. { 'düt-ē ,sī-kəl }

**duty cyclometer** [ENG] Test meter which gives direct reading of duty cycle. { 'düt-ē sī'klām-əd-ər }

**duty factor** See duty cycle. { 'düt-ē ,fak-tər }

**duty of water** [HYD] The total volume of irrigation water required to mature a particular type of crop, including consumptive use, evaporation and seepage from ditches and canals, and the water eventually returned to streams by percolation and surface runoff. { 'düt-ē əv 'wöd-ər }

**duty ratio** [ELECTR] In a pulse radar or similar system, the ratio of average to peak pulse power. Also known as duty cycle. { 'düt-ē ,rā-shō }

**DUV** See data under voice.

**duvetyn** [TEXT] A twill fabric with a napped velvety surface which obscures the weave. { 'dū-vət-ən }

**D value** [NAV] The difference between pressure altitude and absolute altitude, as determined at a given time in flight, expressed algebraically; the absolute altitude is always minuend. Also known as D sounding. { 'dē ,val-yū }

**D variometer** See declination variometer. { 'dē ,ver-ē'am-əd-ər }

**Dvorak keyboard** [ENG] A keyboard whose layout is altered from that of the standard qwerty keyboard to speed up typing; more of the frequently used keys are on the home row. { də'vór,ak 'kē,bórd }

**dwarf** [BIOL] Being an atypically small form or variety of something. [MED] An abnormally small individual; especially one whose bodily proportions are altered. { 'dworf }

**dwarf Cepheids** [ASTRON] A class of pulsating variable stars with periods of less than 6 hours and spectral type A or F; similar to  $\delta$  Scuti stars but sometimes distinguished from them by the slightly larger amplitudes of their light curves. Also known as AI Velorum stars. { 'dworf 'sef-ē-ədz }

**dwarf disease** [PL PATH] A virus disease marked by the inhibition of fruit production; common in plum trees. { 'dworf di,zēz }

**dwarf galaxy** [ASTRON] An elliptical galaxy with low mass and low luminosity, having at most a few tens of millions of stars. { 'dworf 'gal-ik-sē }

**dwarfism** [MED] Underdevelopment of the body due to surgical removal of the pituitary gland or hyposecretion of growth hormone. { 'dwór,fiz-əm }

**dwarf mouse unit** [BIOL] A unit for the standardization of somatotropin. { 'dworf 'maüs ,yü-mat }

**dwarf novae** [ASTRON] A class of irregular variable stars which undergo rapid increases in brightness of several magnitudes at semiperiodic intervals, and then decrease more slowly to the normal minimum; they may be divided into U Geminorum stars and Z Camelopardalis stars. { 'dworf 'nō,vī }

**dwarf spheroidal galaxy** [ASTRON] One of the smallest and faintest of the dwarf galaxies, with an effective radius of 200-

1000 parsecs and an absolute visual magnitude between -13. { 'dworf sfir'oid-əl 'gal-ik-sē }

**dwarf star** [ASTRON] A star that typically has surface temperature of 5730 K, radius of 428,000 miles (690,000 km), mass of  $2 \times 10^{33}$  grams, and luminosity of  $4 \times 10^3$  second. Also known as main sequence star. { 'dworf ,stär }

**dwell** [DES ENG] That part of a cam that allows follower to remain at maximum lift for a period [ELEC] The number of degrees through which the cam rotates from the time that the contact points close to the time that they open again. Also known as dwell angle. { 'dwell }

A pause in the application of pressure to a mold. { 'dwell }

**dwell angle** See dwell. { 'dwell ,an-jəl }

**dwey** See dwigh. { 'dwā }

**dwigh** [METEOROL] In Newfoundland, a sudden snow storm. Also known as dwey; dwoy. { 'dwī }

**Dwight-Lloyd machine** [MIN ENG] A continuous machine in which the feed is moved on articulated pl. by chains in conveyor-belt fashion. { 'dwīt 'lōid m: }

**Dwight-Lloyd process** [MIN ENG] Blast roasting, currents being drawn downward through the ore. { 'dwīt ,präs-əs }

**DWL** See design waterline.

**dwoy** See dwigh. { 'dwōi }

**dwt** See deadweight tonnage; pennyweight.

**Dwyka tillite** [GEOL] A glacial Permian deposit that spread in South Africa. { də'vik-ə 'ti,līt }

**DX** See distance reception.

**DX coil** See direct-expansion coil. { 'dē'eks ,kōil }

**Dy** See dysprosium.

**dyad** [CYTOL] Either of the two pair of chromatic by separation of a tetrad during the first meiotic division.

[MATH] An abstract object which is a pair of vectors given order on which certain operations are defined.

**dyadic expansion** [MATH] The representation of a number in the binary number system. { dī'ad-ik ik'spanch }

**dyadic operation** [MATH] An operation that has two operands. { dī'ad-ik ,əp-ə'rā-shən }

**dyadic processor** [COMPUT SCI] A type of multiprocessor that includes two processors which operate under control of the same copy of the operating system. { dī'ad-ik 'präs-əs }

**dyadic rational** [MATH] A fraction whose denominator is a power of 2. { dī'ad-ik 'rash-ən-əl }

**dye** [CHEM] A colored substance which imparts a permanent color to other materials. Also known as dyestuff. { 'dī }

**dyecrete process** [ENG] A process of adding color to concrete with organic dyes. { 'dī,kreī ,präs-əs }

**dyeing** [CHEM ENG] The application of colorants to material, usually fibrous or film, in order to impart a degree of color permanence demanded by the project. { 'dī-ŋ }

**dyeing assistant** [CHEM] Material such as sodium sulfite added to a dye bath to control or promote the action of the dye. { 'dī-ŋ əs,sist-ənt }

**dye laser** [OPTICS] A type of tunable laser in which the active medium is a dye such as acridine red or esculin. { 'dī ,lēz-ər }

molecules, and laser action takes place between the ground electronic states, each of which comprises a vibrational-rotational continuum. { 'dī ,lēz-ər }

**dye penetrant** [MET] A dye-containing liquid used for detecting cracks or other surface defects in nonmagnetic materials. { 'dī ,pen-ə-trənt }

**dye polymer recording** [COMPUT SCI] An optical technique in which dyed plastic layers are used as a recording medium. { 'dī 'pāl-ə-mər ri'kórd-ŋ }

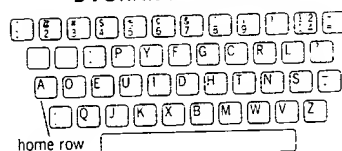
**dye-retarding agent** [MATER] Materials that delay the rate of dye absorption, preventing rapid exhaustion. { 'dī ri,tārd-ŋ ,ā-jənt }

**dyestuff** See dye. { 'dī ,staf }

**dye toning** [GRAPHICS] The process whereby the color of a developing image is altered by changing the color of the dye solution and then placing the film in a suitable dye solution. { 'dī ,tōn-ŋ }

**dynamic address translator** [COMPUT SCI] A device used in a virtual memory system to automatically translate a virtual address inquiry in terms of segment number within the segment, and position of the

#### DVORAK KEYBOARD



Layout of the Dvorak keyboard.  
(After A. Freedman, *The Computer Glossary*, 4th ed., 1989)